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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,912	09/24/2003	Stephane Follonier	09915.0002-00000	6522
22852	7590	09/07/2007		
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413			EXAMINER VENC, DAVID J	
			ART UNIT 1641	PAPER NUMBER
			MAIL DATE 09/07/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/670,912

Applicant(s)

FOLLONIER ET AL.

Examiner

David J. Venci

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on June 27, 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-39, 41-47, 49-53 and 55-60 is/are pending in the application.
- 4a) Of the above claim(s) 34-39, 41-47 and 49-53 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-33 and 55-60 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-39, 41-47, 49-53 and 55-60 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on September 24, 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submissions filed on January 16, 2007, April 4, 2007, and June 27, 2007, are entered.

Currently, claims 1-39, 41-47, 49-53 and 55-60 are pending. Claims 34-39, 41-47 and 49-53 are directed to a non-elected Invention and were withdrawn from consideration pursuant to 37 CFR 1.142(b) in the Office Action dated March 17, 2006.

Claims 1-33 and 55-60 are under examination.

### *Election/Restrictions*

Examiner acknowledges Applicants' election with traverse of a "liquid" sample in Applicants' reply filed June 27, 2007. Applicants traverse on the grounds that the claims impose no serious search burden, at least because Examiner already searched all the claims. Applicants' argument is not persuasive because Examiner's search burden was updated by Applicants' claim amendments and persuasive argumentation. However, Examiner agrees to rejoin and search for the gas samples upon indication of allowable subject matter.

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### ***Drawings***

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to under 37 CFR 1.83(a). Specifically, the cartoon in Fig. 1 does not clearly identify each of the elements listed (a) through (g) because all of the letters "(a)" through "(g)" appear to be floating without direction in the void outside the cartoon. The drawings must show every feature of the invention specified in the claims. Alternatively, the features must be canceled from the claims. No new matter should be entered.

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***Claim Rejections - 35 USC § 112 – first paragraph***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-33 and 55-60 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter not described in the specification in such a way so as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Specifically, Applicants' amendment filed July 17, 2006, amends claims 1, 2, 13 and 24 requiring a measuring cell comprising both a "fluid" AND a "sample". Examiner is unable to locate support in Applicants' original specification for a measuring cell comprising both a "fluid" AND a "sample".

Applicants are required to cancel new matter.

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***Claim Rejections - 35 USC § 112 – second paragraph***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-33 and 55-60 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

Specifically, whether/how the claimed "tube" guides light through a fluid contained within a measuring cell is not clear. The structural cooperative relationship between "tube" versus "fluid" appears omitted from claims 1 and 13. The structural cooperative relationship between "tube" versus "fluid contained within the at least one measuring cell" appears omitted from claims 1 and 13.

Claims 13-33, 59 and 60 are further rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 13, the phrase "the at least one fluid dispensing element dispenses the sample to the at least one measuring cell" is indefinite. Whether/how said fluid dispensing element dispenses sample into a fluid-filled measuring cell is not clear. How does it fit?

In claim 13, the phrase "the at least one capture agent" lacks antecedent basis.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-14, 16-18, 20, 21, 24-33 and 55-60 are rejected under 35 U.S.C. 102(b) as being anticipated by Liu (US 6,020,207).

Liu describes a system (see Title, "Sensors") comprising:

- a. a light-emitting element emitting light (see Fig. 4, light source 30);
- b. a light-connecting element transmitting light (see e.g., Fig. 3, solid optical fiber 18, solid optical fiber 20; see *also*, Fig. 4, mirror 32, lens 34; optical fiber 36);
- c. a measuring cell comprising:
  1. a tube (see e.g., Fig. 1, sensor cell 10; see *also*, protective outer cover 22; see *also*, amorphous polymer material 14; see *also*, tube 12) comprising:
    - i. a first opening (see e.g., Fig. 3, "↑", "↓", solid optical fiber 18, solid optical fiber 20; see *also*, col. 3, line 17, "proximal and distal ends of tube 12");

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- ii. a second opening (see e.g., Fig. 3, "↑", "↓", solid optical fiber 18, solid optical fiber 20; see *also*, col. 3, line 17, "proximal and distal ends of tube 12");
  - iii. an inner surface (see e.g., Fig. 1, interior wall surface 26; see *also*, tube 12) exposed to a sample (see Fig. 1, liquid core 16), the inner surface coated with a binding agent (see Fig. 1, sensing molecules 24), the binding agent binding a target (see Fig. 2, analyte molecules 28) from the sample; and
2. a fluid contained within the measuring cell, the fluid comprising light (see Fig. 3, the zig-zag arrows);
- d. a light connecting element transmitting light (see e.g., Fig. 3, solid optical fiber 18, solid optical fiber 20; see *also*, Fig. 4, mirror 32, lens 34; optical fiber 36);
  - e. a light detecting element (see Fig. 4, light detector 38, photodiode array 40); and
  - f. a fluid-dispensing element dispensing sample (see e.g., Fig. 3, "↑", "↓"; see *also*, col. 7, line 20, "pumped"; see *also*, col. 3, line 17, "proximal and distal ends of tube 12").
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Claims 1-6, 9, 11-18, 21, 24-28, 30, 32, 33, 55-58, 60 are rejected under 35 U.S.C. 102(b) as being anticipated by Bohnenkamp (US 6,252,657).

Bohnenkamp describes a system (see Title, "Fluorometer") comprising:

- a. a light-emitting element emitting light (see Fig. 1, light source 2);
- b. a light-connecting element transmitting light (see Fig. 1, optical wedge 6, optical filters 5);
- c. a measuring cell comprising:
  1. a tube (see Fig. 1, capillary 1) comprising:
    - i. a first opening (see e.g., col. 3, line 61, "front end"; see *also*, col. 4, lines 8-9, "conical end");
    - ii. a second opening (see e.g., col. 3, line 61, "front end"; see *also*, col. 4, lines 8-9, "conical end");
    - iii. an inner surface (see col. 1, line 51, "inner wall of that capillary") exposed to a sample (see e.g., col. 3, line 6, "the sample"; see *also*, col. 3, lines 56-57, "The capillary[...] contains in the inner volume at least one analyte") (paraphrasing mine), the inner surface coated with a binding agent (see e.g., col. 3, line 9, "avidin coated capillaries"), the binding agent binding a target (see e.g., col. 3, line 10, "biotin covered microbeads") from the sample; and

2. a fluid contained within the measuring cell, the fluid comprising light (see e.g., col. 3, line 56, "inner volume"; see *a/so*, Fig. 1, void between capillary 1 and optical wedge 6; see *a/so*, Fig. 1, void between capillary 1 and optical filter 5);
- d. a light connecting element transmitting light (see Fig. 1, optical wedge 6, optical filters 5);
- e. a light detecting element (see Fig. 1, light sensitive instrument 4); and
- f. a fluid-dispensing element dispensing sample (see Fig. 1, "3").

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-14, 16-33 and 55-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gilby & Carson (US 5,184,192) in view of Liu (US 6,020,207).

Gilby & Carson describe a system (see Title, "Photometric apparatus with a flow cell") comprising:

- a. a light-emitting element emitting light (see Fig. 1, light source 20);
- b. a light-connecting element transmitting light (see *e.g.*, Fig. 1, input optical fiber 22; see *also*, Fig. 1, exit optical fiber 28; see *also*, col. 4, line 40, "optical filters");
- c. a measuring cell comprising:
  1. a tube (see *e.g.*, Fig. 2, cell body 32; see *also*, Fig. 1, flow cell 10; see *also*, Fig. 1, bore 24; see *also*, col. 3, line 24, "tubular conduit") comprising:
    - i. a first opening (see *e.g.*, Fig. 1, exit 16; fluid outlet section 18; see *also*, Fig. 1, input optical fiber 22; see *also*, Fig. 1, exit optical fiber 28; see *also*, col. 3, lines 48-49, "ends of the conduit"; line 49, "flow ports");

- ii. a second opening (see *e.g.*, Fig. 1, exit 16; fluid outlet section 18; see *a/so*, Fig. 1, input optical fiber 22; see *a/so*, Fig. 1, exit optical fiber 28; see *a/so*, col. 3, lines 48-49, "ends of the conduit"; line 49, "flow ports");
  - iii. an inner surface (see *e.g.*, Fig. 1, bore 24; see *a/so*, Fig. 2, fluoropolymer layer 12; see *a/so*, col. 3, lines 23-24, "inner surface") exposed to a sample (see Fig. 1, sample stream 26);  
and
2. a fluid contained within the measuring cell (see Fig. 2, liquid 26), the fluid comprising light (see col. 4, lines 51-52, "light is guided by total internal reflection at the boundary between liquid 26 and layer 12");
- d. a light connecting element transmitting light (see *e.g.*, Fig. 1, input optical fiber 22; see *a/so*, Fig. 1, exit optical fiber 28; see *a/so*, col. 4, line 40, "optical filters");
  - e. a light detecting element (see Fig. 1, detector 30); and
  - f. a fluid-dispensing element dispensing sample (see col. 3, lines 16-17, "separation column").

Gilby & Carson do not describe a binding agent.

However, Liu describes binding agents (see Fig. 1, sensing molecules 24) for binding target analytes (see Fig. 2, analyte molecules 28) from a sample.

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It would have been obvious to a person of ordinary skill to include Liu's binding agents with Gilby's & Carson's system because Liu said binding agents improve assay selectivity (see e.g., col. 4, lines 4-5, "selectively attracts"; see *also*, col. 7, lines 51-56).

### **Double Patenting**

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-33 and 55-60 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-8, 10-30 and 32-35 of copending Application No. 10/572931 in view of Hawes (US 3,556,659).

Application No. 10/572931 claims a system (see claim 14) using language almost identical to independent claims 1 and 13 of the instant application.

Application No. 10/572931 does not claim a fluid (contained within the measuring cell) comprising light.

However, Hawes describes such a fluid contained within a measuring cell, the fluid comprising light (see col. 3, lines 37-42).

It would have been obvious to a person of ordinary skill to claim Hawes' fluid in Application No. 10/572931 because Hawes discovered that such a sensor configuration "minimizes fluorescence of the glass wall and scattering of light from the cell itself" (see col. 3, lines 27-36), thereby improving the glass wall configuration claimed in Application No. 10/572931.

***Response to Arguments***

*Claim Rejections - 35 USC § 112 – first paragraph*

In prior Office Action, claims 1, 8, 13, 29, 55 and 56 were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Specifically, prior Examiner was unable to locate support for a fluid core waveguide. Applicants acknowledge support for a fluid core waveguide at page 7 (see Applicants' Supplemental Response, filed April 4, 2007). In accordance with Applicants' direction, Examiner finds support for a fluid core waveguide in the specification at p. 7, lines 17-21, which describes a gas- or liquid-filled tube, wherein the filling has detectable optical properties. Accordingly, this rejection is withdrawn.

*Claim Rejections - 35 USC § 112 – second paragraph*

In prior Office Action, claims 1-33 and 55-60 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for various reasons. Applicants' amendment to the claims and/or clarifying argumentation is sufficient to overcome these rejections. Accordingly, these rejections are withdrawn.

*Prior Art Claim Rejections*

In prior Office Action, claims 1-6, 9, 11-18, 21, 24-28, 30, 32, 33, 55-58, 60 were rejected under 35 U.S.C. 102(b) as being anticipated by Bohnenkamp (US 6,252,657).

In response, Applicants appear to provide argumentation premised on the assertion that Applicants' invention requires light guided through a liquid or a gas, whereas Bohnenkamp describes an invention requiring light guided through a capillary wall.

Applicants' argument is not persuasive because Applicants' argument is not commensurate in scope to Applicants' invention, as *claimed*. As claimed, Applicants' invention merely requires a fluid (contained within the measuring cell), the fluid comprising light. Similarly, Bohnenkamp describes a system having a

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fluid (see e.g., col. 3, line 56, "inner volume"; see *a/so*, Fig. 1, void between capillary 1 and optical wedge 6; see *a/so*, Fig. 1, void between capillary 1 and optical filter 5), wherein the fluid comprises light (see Fig. 1, the arrows).

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In prior Office Action, claim 23 was rejected under 35 U.S.C. 103(a) as being unpatentable over Bohnenkamp (US 6,252,657) in view of Saaski *et al.* (US 6,484,594). Examiner observes that Saaski bases his motivation for using a waste container within the context of a "recirculating" system. In addition, Examiner observes that Bohnenkamp does not describe a "recirculating" system. Accordingly, this rejection is withdrawn.

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In prior Office Action, claims 1, 2, 5-10, 12-15, 18-22, 24, 27-31, 33 and 55-60 were rejected under 35 U.S.C. 102(e) as being anticipated by Lockhart (US 6,974,673). Claims 3, 4, 25 and 26 were rejected under 35 U.S.C. 102(e) as being anticipated by Lockhart (US 6,974,673) in light of Kumar *et al.* (US 5,624,850). Claims 11 and 32 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lockhart (US 6,974,673) in view of Kumar *et al.* (US 5,624,850). Claims 16 and 17 were rejected under 35 U.S.C. 103(a) as being unpatentable over Lockhart (US 6,974,673) in view of Aker *et al.* (US 6,558,626). Claim 23 was rejected under 35 U.S.C. 103(a) as being unpatentable over Lockhart (US 6,974,673) in view of Saaski *et al.* (US 6,484,594).

Applicants' argumentation distinguishing Lockhart is persuasive. In addition, Examiner observes that Lockhart describes some cartoon "ferrules" in cartoon Figs. 1, 3, 4, 7A and 8A. Furthermore, Examiner observes that said cartoon "ferrules" do not have wavy lines evanescent from said cartoon "ferrules". Accordingly, these rejections are withdrawn.



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**Conclusion**

No claims are allowable at this time.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David J. Venci whose telephone number is 571-272-2879. The examiner can normally be reached on 08:00 - 16:30 (EST). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on 571-272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

David J Venci  
Assistant Examiner  
Art Unit 1641

djv

  
CHRISTOPHER L. CHIN  
PRIMARY EXAMINER  
GROUP ~~1800~~ 1641